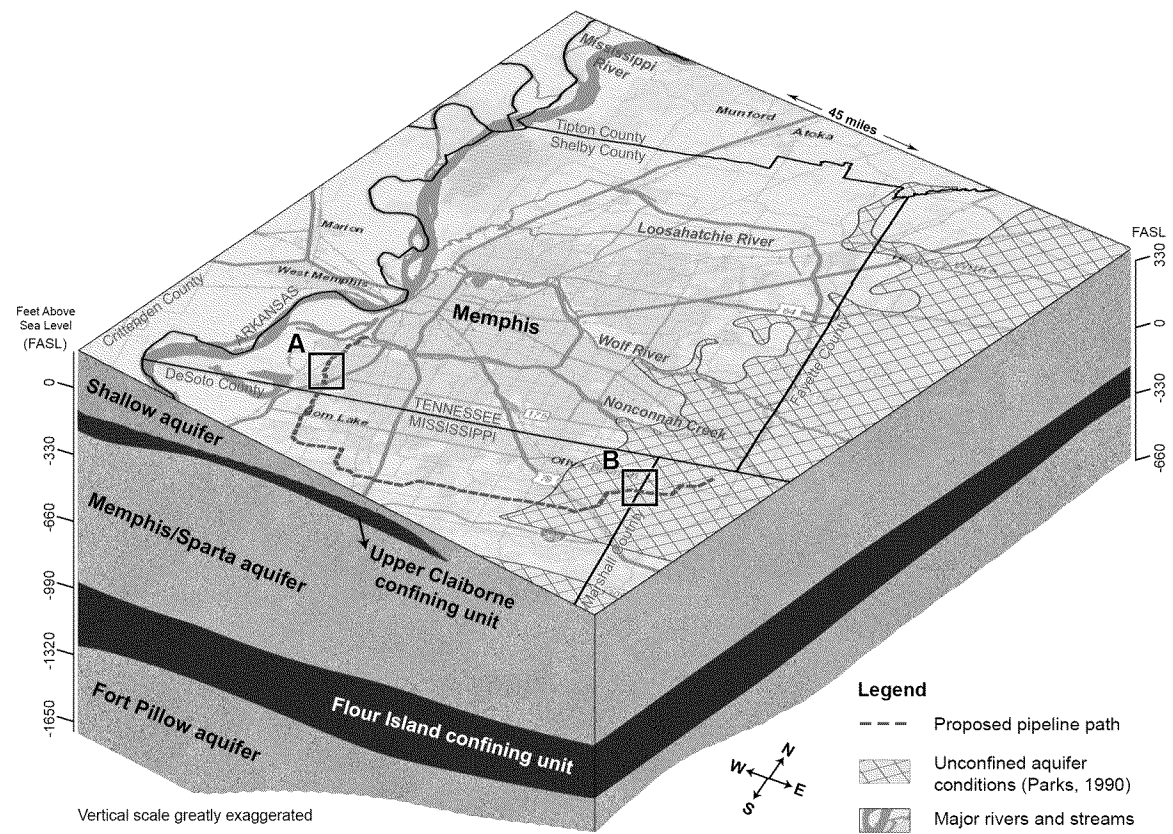


Proposed Byhalia Connection Pipeline: Relation to Local Aquifers



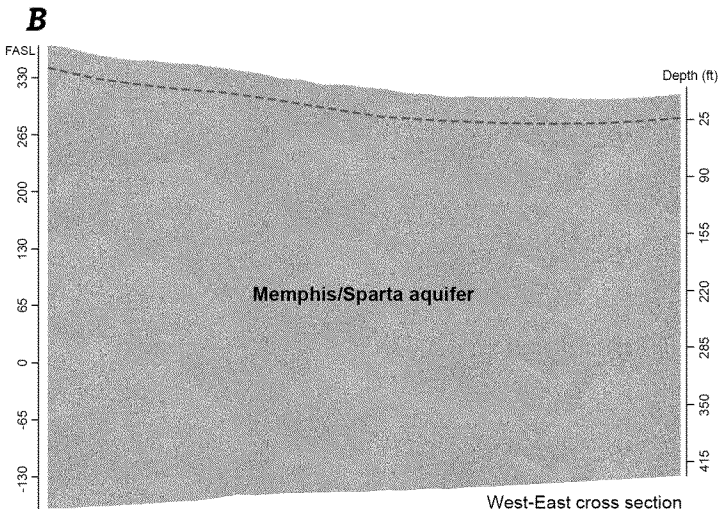
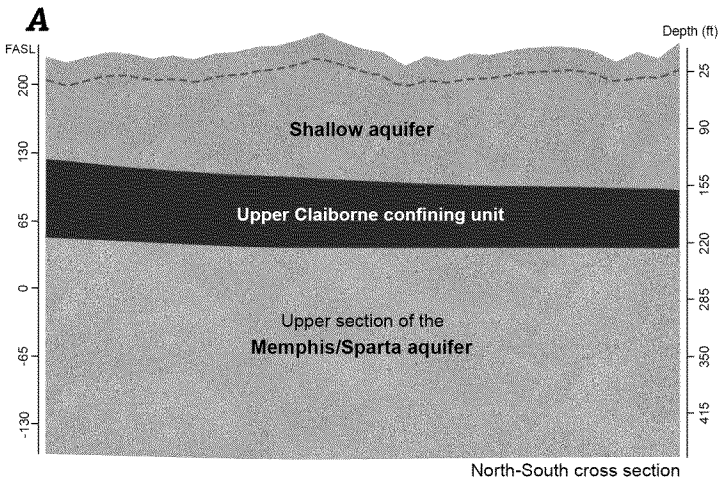
The regional water supply for Shelby County, Tennessee and northern Mississippi comes from an underground geologic formation called an aquifer. An aquifer is a layer below ground that contains water. There are multiple aquifers in our area but the primary drinking water source is the Memphis aquifer which is also called the Sparta aquifer in northern Mississippi. In general, water movement within our aquifers is very slow, averaging 0.00001 MPH. Water in local rivers moves much faster, at speeds of 2-10 MPH.

The diagrams above show the proposed Byhalia Connection Pipeline in relation to this groundwater source. The pipeline path is shown as a red dotted line at the **maximum depth** of 25 feet, but the pipeline depth will vary with a majority of it at **4-5 feet** below ground surface.

There is a thick clay layer called the Upper Claiborne confining unit that lies above the Memphis/Sparta aquifer. This natural formation provides a protective barrier between this aquifer and any surface level activity. With this clay layer capping the aquifer, it becomes confined and is considered unconfined where the clay is absent. The grey cross-hatched section is an area where there is an absence of clay and the Memphis/Sparta aquifer approaches the ground surface.

There are natural breaches, or gaps, in the clay layer that can allow water of poorer quality to enter the Memphis aquifer; however, there are no known breaches along the proposed pipeline corridor according to the most current research.

Diagram A shows the maximum pipeline depth in an area with the protective clay layer above the Memphis/Sparta aquifer. **Diagram B** shows the maximum pipeline depth in an area where there is no clay layer above the Memphis/Sparta aquifer.



Scientific references

Parks, W.S., 1990. Hydrogeology and Preliminary Assessment of the Potential for Contamination of the Memphis Aquifer in the Memphis Area, Tennessee. U.S. Geological Survey Water-Resources Investigations Report 90-4092, 39 pp. <https://pubs.er.usgs.gov/publication/wri904092>.

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